~~Title~~Abstract: MR ~~g~~Guided ~~p~~Prostate ~~b~~Biopsy - Initial ~~E~~experience at Banner ~~-~~MD Anderson Cancer Center

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~~Abstract~~BACKGROUND:

Prostate cancer is the most common cancer in men. In the care of prostate cancer patients, there are several situations where no standard diagnostic algorithm exists. These include rising PSA with previously negative transrectal ultrasound (TRUS) guided biopsy(s), patients deemed low risk on active surveillance, or rising PSA in a previously treated patient. Several options currently exist including saturation biopsy, MR imaging followed by ultrasound fusion technology to guide the biopsy, or MR imaging with MR-guided prostate biopsy. With the collaboration of our urologists, we have recently started the MR-guided prostate biopsy using the InVivo DynaTrim transrectal biopsy system.

HYPOTHESIS: Based on the literature findings, we hypothesized that MR-guided prostate biopsy can provide improved biopsy results than historical success rates of TRUS guided biopsy.

METHODS: We retrospectively reviewed the biopsy indications, prior biopsy results, and current biopsy results of the 21 patients we biopsied in the first year of the program.

RESULTS: The patients were first~~In the first year of the program, we biopsied 21 patients~~ categorized into the above three indications. In 8 patients with elevated PSA with or without previous negative biopsy, we sampled 11 suspicious lesions with cancer identified in 6 lesions, one with HGPIN. One lesion measured 5 mm in size with highly suspicious prebiopsy appearance but returned normal prostatic tissue which is discordant with imaging findings. In 9 patients on active surveillance, we sampled 14 suspicious lesions with upgrading in 5 patients. In 2 patients, the suspicious lesions returned normal tissue. The remaining 2 patients had concordant biopsy results. In 3 previously treated patients, biopsy of 3 suspicious lesions returned either fibrous or normal prostatic tissue. Total table time for a one site biopsy ranges between 45-60 minutes while each additional site adds 15-20 minutes. There were no post biopsy episodes of urinary tract infection or significant hemorrhage. Our initial experience suggests that MR imaging followed by MR-guided prostate biopsy of suspicious prostate lesion is a viable option in these clinically difficult situations.